ATI Allegheny Ludlum Martensitic Stainless Steel Type 410, Hardened + 427°C Temper

Category : Metal , Ferrous Metal , Stainless Steel , T 400 Series Stainless Steel

Material Notes:

Allegheny Ludlum Type 410 is a hardenable straight-chromium stainless steel which combines superior wear resistance of high carbon alloys with the excellent corrosion resistance of chromium stainless steel. Oil quenching this alloy from temperatures between 1800°F and 1950°F produces the high strength and/or wear resistance as well as corrosion resistance.A major use for this grade of heat treatable stainless steels is in cutlery. When blanking cutlery parts from annealed raw material stock, Type 410 will usually exhibit hardness, yield strength, and tensile strength that are low enough for fine blanking purposes.UTS, TYS, and hardness values below obtained after austenitizing at 1800-1950°F (982-1066°C) followed by an oil quench and two hour temper as above.Information provided by Allegheny Ludlum Corporation.

Order this product through the following link:
http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-Martensitic-Stainless-Steel-Type-410-Hardened-427C-Temper.php

Physical Properties	Metric	English	Comments
Density	7.65 g/cc	0.276 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	41	41	
Tensile Strength, Ultimate	1300 MPa	189000 psi	Typical
Tensile Strength, Yield	916 MPa @Strain 0.200 %	133000 psi @Strain 0.200 %	typical
Modulus of Elasticity	200 GPa	29000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	10.5 µm/m-°C @Temperature 20.0 - 200 °C	5.83 µin/in-°F @Temperature 68.0 - 392 °F	
	11.6 µm/m-°C @Temperature 20.0 - 600 °C	6.44 µin/in-°F @Temperature 68.0 - 1110 °F	
Thermal Conductivity	24.899 W/m-K @Temperature 100 °C	172.80 BTU-in/hr-ft²-°F @Temperature 212 °F	
Melting Point	1482 - 1532 °C	2700 - 2790 °F	
Solidus	1482 °C	2700 °F	

Thermal Properties	Metric	English	Comments
Liquidus	1532 °C	2790 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.15 %	<= 0.15 %	
Chromium, Cr	11.5 - 13.5 %	11.5 - 13.5 %	
Iron, Fe	86 %	86 %	as balance
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Nickel, Ni	<= 0.50 %	<= 0.50 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000560 ohm-cm	0.0000560 ohm-cm	

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